Weekly Report for 10/28/2013

Highlights

• This is a two-week report. (Kathy Harkay)

• Presented SCU0 talk at APS/Users Operations Meeting on behalf of the SCU0 team. (Kathy Harkay)

• Addressed SCU0 beamline concerns regarding communication and access mode issues. Developed a plan and action items, and implemented these when the communication issue recurred on 11/1. (Kathy Harkay)

APS Renewal and Upgrade

• Presented SCU0 talk at APS/Users Operations Meeting on behalf of the SCU0 team. Included SCU0 user input as well as operational experience I analyzed. (Kathy Harkay)

• Attended MBA User workshop. (Kathy Harkay)

MCR Operations

Storage Ring Operations

• Addressed SCU0 beamline concerns regarding communication and access mode issues. Instructed ASD_OPS that in case of a Labview communication error (occuring most Fridays at 9:25 am), notify M. Kasa and M. Smith, then notify the SCU0 User to check when it is okay to reboot the system. Discussed the issues further with M. Smith and M. Kasa as to how to debug the two issues. M. Smith implemented a network sniffer to debug the communication issue, which caught data on 11/1. Implemented the plan noted above to recover communications, assisted by Ops, M. Kasa, and M. Smith. Regarding the access mode issue, asked M. Smith to develop a flowchart on how the SCU0 database and state program work. We devised a plan to add a data logger and test the controls under conditions that mimic a beam dump and quench. Requested machine study time to implement and test the controls. (Kathy Harkay)

• Removed S4B:P1 from orbit control configuration since it glitched twice causing an orbit bump when restarting orbit control. This is the same BPM Sajaev adjusted the offset on the week before. Diag group found a bad connection in the cable during studies. (Karen Schroeder)

• Provided information to the F.C. to relay to the Users at 23-ID US. They requested information regarding the X-ray BPM in horizontal. I found that it had been taken out at the beginning of Run 2013-2 because it exceeded the 100um deviation limit during gap scans. Also passed the information on to the Diag Group who will be doing X-ray bpm data collection and adjusting the blades if necessary during the next two day study period. (Karen Schroeder)

• With Ju Wang, attempted to reset the sexptupole in S13 which tripped during User operations, but it would not reset. Lowered the gap voltage at Sajaev's request to help improve lifetime. Gave instructions to MCR on how to recover once the supply had been swapped until Emery was able to provide instructions on combining files. (Karen Schroeder)

• Assisted operators with turning beam over to Users. (Karen Schroeder)

• Assisted in investigation of beam loss from the singlet. (Karen Schroeder)

• Investigated orbit error generated by S31A:P1 reported by Fystro. He had found that it had been taking step changes several times over the past several hours and was causing and orbit error through 30-ID in the horizontal plane. I asked that the MCR remove it from horizontal only since the small errors in vertical might be coupled with horizontal. After monitoring it for a few hours, the small errors which increased/decreased still remained in the vertical plane so I requested that it be removed and replaced with S31A:P2. (Karen Schroeder)

Training

• Performed two successful ACO storage ring requalifications. (Karen Schroeder)

MCR Operations administrative/misc.

• Prepared the downtime report and presented to OPS Directorate because Flood was unavailable. (Karen Schroeder)

APS Machine Studies

Storage Ring Studies

• Participated in high-charge studies in the PAR, with C.Y. Yao. Achieved 7.2 nC, apparently stable at extraction although vertical oscillations were observed after capture in the 12th rf harmonic. (Kathy Harkay)

• Performed gap scans and restored X-ray bpms to orbit control which had been removed due to steerings. (Karen Schroeder)

• Updated machine studies schedule with late requests (Karen Schroeder)

• Discussed the late request to tie-in 35-ID's water with 35-BM's water. During the original discussion it was unclear whether the FE-EPS would prevent beam from being stored, as well as not knowing if a study would need to verify bunch purity, so it was delayed until the following two day study. According to SI Group, if 35-BM is off-line the tie-in will not prevent us from storing beam. (Karen Schroeder)

APS Machine Research and Development

Storage Ring Research and Development

• Participated in a meeting by Y.-C. Chae on the new S37 horizontal scraper design. Presented synchrotron radiation ray tracing and heat load calculations for the scraper. (Kathy Harkay)

• Analyzed scraper simulation data for titanium and aluminum alloys. Attended scraper meeting held by Y-C. Chae and presented results. (Jeff Dooling)

• The instantaneous temperature rise for a dump of 100 mA in aluminum is less than for the titanium-aluminum-vanadium alloy; however, the temperature margin (difference between melting and peak temperatures) was significantly larger in the titanium alloy. (Jeff Dooling)

Linac Research and Development

• Following back reflection technique from the input mirror suggested by Y. Li, was able to get the regen cavity to lase. (Jeff Dooling)

• Next step will be to add the second thin film polarizer (TFP) to the cavity (as the cavity is normally configured) and re-align. (Jeff Dooling)

APS Machine Software

Injectors

• changed the presets pattern selection to only contain effective ones to P0FeedbackControl. (Hairong Shang)

• added kicker rate parameter to RF gun kicker waveform collection and kicker rate display in kicker

waveform plots of AcquireLinaceWaveform. (Hairong Shang)

• added waiting for checking the existence of ${magnet}Vref.afg100 file for slow network response sometimes to booster ramp correction scripts. (Hairong Shang)

General

• added "acquire linac waveforms" to "linac routine operations" menu in OAGapps. (Hairong Shang)

• made the measurement and variables list box in quickExperiment stretchable. (Hairong Shang)

Publications, papers and report

• Reviewed a paper on electron cloud for PRL. (Kathy Harkay)

• Reviewed a paper, as co-author, on ILC damping ring electron cloud modeling and provided extensive comments. L. Boon is also a co-author. The paper will be submitted to PRSTAB. (Kathy Harkay)

Meetings, workshops, conferences, committees, LMS related, and reviews

• attend MBA workshop on Monday and Tuesday. (Hairong Shang)

• Reviewed 156-page FACET-II proposal and sent extensive critique/comments to SAREC committee chair A. Seryi, who compiled and forwarded comments to FACET-II Project head in time for DOE Review. (Kathy Harkay)

Education, Mentoring and outreach

• installed JDK, glassfish and WedPDA on laptope, successfully setup WebPDA with simulated IOC. Then had IT installed the required software for WebPDA on tulip, connected to real APS EPICS and was able to display the APS SR storage ring current in real time on the web. (Hairong Shang)

• prepared talk on WebPDA, and prepared the real example to show how WebPDA work with our live PVs. (Hairong Shang)

• Held weekly meeting with L. Boon to discuss physics and progress on her thesis work. Discussed Compton scattering. (Kathy Harkay)

Safety and Required Training

• Completed SEC160 training. (Kathy Harkay)

Miscellaneous

• Completed ESH 377 training, Electrical Safety Awareness. (Jeff Dooling)

No Report Submitted

• Michael Borland

• Yong Chul Chae

• Louis Emery

• Randy Flood

• Stan Pasky

- Vadim Sajaev
- Nick Sereno
- Robert Soliday
- Chun-xi Wang
- Marion White
- Aimin Xiao
- Chih-Yuan Yao
- Yusong Wang
- Ryan Lindberg
- Yin-e Sun